

REMARKSIN THE CLAIMS

The following claims are amended to better describe the Applicants' invention.

In Claim 1:

In line 4 FOLLOWING the words "first glass rods", the phrase "comprise one of two or more different refractive indices" is DELETED and REPLACED with the phrase -- has a single refractive index either higher or lower than a predetermined target refractive index, -- in order to clarify the claim and to better describe the invention. Support is found at page 7, lines 1 – 5 and 11 – 15; page 11, lines 3 – 13; and original claims 4 and 7, now canceled.

In line 5 AFTER the words "numerical average", the words "the refractive index of each " are DELETED and REPLACED with the words -- substantially all --. The changes are made to better describe the invention. Support is found in the inherency of the disclosure at page 7, lines 1 – 5; and at page 8, lines 11 – 21.

In line 6 AFTER the words "substantially equal to" the article "a" is DELETED and REPLACED with the definite article -- said -- to account for the earlier amendment introducing this element. The change is made to correct the antecedence of the element "predetermined target refractive index."

In claim 8:

The Claim 8 is amended to incorporate the limitation of Claim 1 from which this Claim depends. The change is made to better describe the invention. Support for the particular arrangement of steps in the amended claim is found at page 20, line 28 though page 22, line 10.

In line 1, the preamble "The method of claim1, wherein the step of inserting said contiguous bundle further includes the steps of:" is DELETED and REPLACED the preamble and first two clauses of claim 1:

A method for providing a glass preform for use as a source for drawing an optical fiber, the method comprising the steps of:

collecting a plurality of first glass rods into a substantially contiguous bundle, wherein each of said first glass rods has a single refractive index either higher or lower than a predetermined target refractive index, wherein a numerical average of substantially all of said first glass rods is substantially equal to a said predetermined target refractive index;

inserting said contiguous bundle into a glass tube, wherein said glass tube has an inside diameter chosen to contain said contiguous bundle, forming thereby a preform assembly;

In line 2, BEFORE the word "removing", a carriage return and indentation are inserted to begin a new clause, and in line 3 the comma AFTER the words "preform assembly" is DELETED and REPLACED with a semicolon to end the clause.

In line 3 BEFORE the word "and" BEFORE the word "replacing" is DELETED and REPLACED with a carriage return and an indentation to begin a new clause.

Again in line 3, the words -- of contiguous first glass rods --, are ADDED AFTER the words "replacing said one or more groups" to correct the antecedence of the element "one or more groups".

In lines 6 and 7, the comma and words ",wherein said one or more groups are disposed about a center axis of said contiguous bundle" BEFORE the period ending the sentence are DELETED and REPLACED with a semicolon and the word -- ; and --. The change is made to properly end the present clause and to remove an unnecessary and

redundant phrase since it is self evident that groups of straight rods that are bundled will be disposed about a central axis.

Following line 7, the remaining clause of claim 1:

heating said preform assembly to a glass fusion temperature and causing said preform assembly to fuse to form a solid glass preform such that said chemical composition of each of said first glass rods is maintained in a location proximate or about coincident with a position of each said glass rods within said contiguous bundle.

is inserted to conclude the claim.

Applicants assert that No New Matter was introduced as the result of the foregoing amendments.

IN THE SPECIFICATION

AT PAGE 7

The changes made in lines 4, 5, and 14 to include the word -- predetermined -- before the three uses of the word "target" is made to better describe the invention. Support is found in originally filed claim 4, now canceled.

REJECTION UNDER 35 U.S.C. §112
CLAIM OBJECTIONS UNDER 37 C.F.R. §1.75(c)

Examiner's §1 – 3

Examiner has rejected Claims 8, 9, and 11 – 13 under 35 U.S.C. §112, first paragraph, for failing to comply with the written description requirement of the statute in that Examiner finds no support for the amendment of Claim 8 which requires that the removing of fiber rods is part of the step of inserting.

Examiner has rejected Claims 8, 9, and 11 – 13 under 35 U.S.C. §112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention in that Examiner asserts that there is confusion surrounding the element “preform assembly” and the subsequent processing of this element.

Examiner objects to Claims 8, 9, and 11 – 13 under 35 C.F.R. §1.75(c) in that as being of improper dependent form for failing to further limit the subject matter of a previous claim in that Claim 8 does not further limit a process which maintains all rods, but instead recites rods that are not maintained.

Applicants' Response

Applicants thank the Examiner for his remarks and apologize for the lack of clarity and rigor used to claim the invention. It was Applicants' intention that Claim 8 modify the step of “inserting” of Claim 1 in order to include the sub-process steps of “removing and replacing” fiber rods prior to the step of “heating” the preform assembly. Examiner's interpretation of the claim as-presented, however, is correct. Therefore, Applicants have amended their Claim 8 in order to clarify the claimed subject matter by including the steps of “removing and replacing” as separate steps following the step of “inserting” and prior to the step of “heating”. In order to do this, Applicants have chosen to amend all of the limitations of Claim 1 into Claim 8 to avoid further confusion.

By amending Claim 8 in this way, Applicants now assert that they have removed the source of confusion of the original claim and, therefore, have cured the rejection under 35 U.S.C. §112, first and second paragraphs. Applicants also assert that they have cured the objection to Claim 8 by rewriting the claim in independent form. Moreover, because each of Claims 9, and 11 – 13 depend directly from Claim 8 and further narrow the scope of this claim, the rejection/objections to these claims are also cured.

Applicants, therefore, respectfully request that the Examiner reconsider and withdraw his rejection/objections and pass the amended claim to allowance.

REJECTION UNDER 35 U.S.C. §102(b)

Examiner's §3

Claims 1, 3, 5, 6, 8, 9, and 11 – 13 are pending in the application.

Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. §102(b) as being anticipated by Hopkins, et al., (U.S. Patent Serial Number 3,395,006). Examiner argues that Hopkins, et al., ('006) disclose the bundling and insertion of the bundle into a tube (col. 1, lines 67 – 72); that Hopkins, et al., ('006) disclose that the tube is glass (col. 4, line 48); and that Hopkins, et al., ('006) disclose two refractive indices (col. 3, lines 39 – 47).

Applicants' Response

Applicants thank the Examiner for his remarks. Applicants note, however, that in order to find anticipation MPEP §2131 requires that all claim limitations be fairly disclosed or inherently taught by a single reference. Applicants further note that the clear meaning of the disclosure of Hopkins, ('006), as embodied in the teaching at col. 3 lines 25 – 41; col. 4, lines 31 – 40, and as illustrated in FIGs. 1, 3 and 4, is a fiber bundle comprised of a plurality of fiber rods, wherein each fiber rod comprises a core and a surrounding cladding layer, where the core and cladding layer each has a separate refractive index, BUT wherein all of the fibers rods have the same core

refractive index and the same cladding refractive index. Moreover this is exactly the state of the prior art that the Applicants have themselves disclosed in their specification at page 1, lines 14 – 25.

In contrast to Hopkins ('006), Applicants have amended their claims to recite limitations to bundling fibers, where none of the fibers has a cladding layer, and wherein each fiber has a single refractive index either higher or lower than a predetermined target refractive index. Furthermore, Applicants teach to choose individual fibers such that the ratio of those having a higher refractive index to those having a lower refractive index provides an average refractive index substantially equal to a predetermined target value. That is, the present invention contemplates a multiplicity of glass rods where each rod is characterized by a single refractive index chosen from a limited set of refractive indices (2): one just above and the other just below a target refractive index, so that the numerical average of indices of all of the glass rods is substantially equal to the target index (see page 8, lines 2 – 21).

Since the foregoing limitations are neither recited nor inherently disclosed by the Hopkins ('006) teaching, by amending their Claims 1 and 8, Applicants assert they now recite an invention that is neither taught nor suggested by Hopkins, et al., ('006), in that Hopkins, et al., ('006), do not teach all of the limitations of the Applicants' invention. Moreover, because all remaining claims depend ultimately from amended claim 1 and 8, now shown to be unique and not disclosed or suggested by the prior art, these dependent claims also must be unique since, by definition, a dependent claim merely narrow the scope of the claim from which it depends.

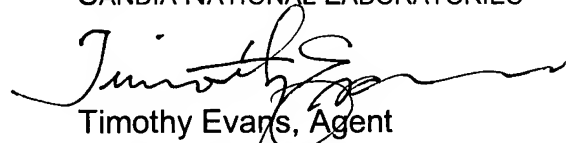
Applicants consequently assert, that they have overcome the rejection under 35 U.S.C. §102(b) regarding Claims 1, 3, 5, 6, 8, 9, and 11 – 13 in that they have amended Claims 1, 8, 9, and 11 – 13 and now claim an invention neither described nor suggested by the prior art. Applicants, therefore, respectfully request the Examiner to reconsider and withdraw his rejection of Claims 1, 3, 5, 6, 8, 9, and 11 – 13 and pass these claims to allowance.

CONCLUSION

Applicant respectfully assert that by amending Claims 1, and 8 the instant invention now claims a unique method that is neither anticipated, suggested nor taught by the prior art. Applicants, therefore, respectfully request favorable reconsideration of the claims now presented and allowance of this application is earnestly solicited.

This response is:

Respectfully submitted by,
SANDIA NATIONAL LABORATORIES

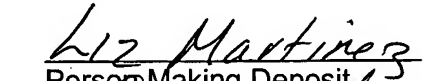
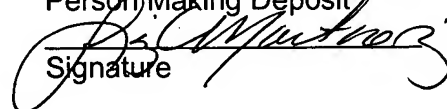

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CERTIFICATION UNDER 37 CFR 1.8

I hereby certify that this Transmittal is being deposited with the U. S. Postal Service on **JUNE 8, 2004**, in an envelope as First Class mail addressed to: Commissioner for Patents, Mail Stop Non Fee Amendment, P.O. Box 1450, Alexandria, VA 22313-1450

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